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Orange Maize Improves Yields and Nutrition for Families in Zambia



HarvestPlus

Emerson Banji, a maize farmer in Zambia's Central Province, shows off a cob of his orange maize.

In the village of Muyumbana in Central Zambia, it is hard not to notice the maize. It is everywhere—towering six to seven feet high, taking up nearly every piece of open space, and crowding close to homes and schools. When the wind blows through the middle of the planted rows, it sounds like a gentle rainstorm.

Unfortunately, farmers can't always count on their crops getting enough real rain, and this year the maize in Muyumbana hasn't seen enough of it.

But Emerson Banji isn't worried. Despite the poor growing conditions this season, he is confident that his plot of orange maize is going to feed his family. And he knows that it will nourish them in a way his neighbors' white maize cannot.

"I was privileged to plant this orange maize," Banji tells visitors to his small plot. "What I have now proved is that it can give someone a better harvest...and I will continue growing this kind of maize because it can even help me and my family have a better life. I would prefer to grow orange maize than white maize."

A Feed the Future-supported program implemented by [HarvestPlus](#) has been demonstrating the benefits of orange maize ever since three new varieties that provide higher levels of vitamin A were released in 2012 by the Zambian Agricultural Research Institute. Promising varieties were bred in Mexico at the International Maize and Wheat Improvement Center (CIMMYT) under the HarvestPlus program and then extensively tested in Zambia.

In addition to providing more vitamin A than white maize, the new varieties are also high-yielding, disease-resistant, and drought-tolerant, reducing farmers' vulnerability to threats like reduced rainfall.

Vitamin A deficiency, which can lead to loss of vision, impaired immune function, and other ailments, is a public health threat in Zambia that affects more than 50 percent of children under five years of age. While vitamin A is available from a variety of foods, such as fruit, green leafy vegetables, and animal products, these are often too expensive or simply unavailable in Zambia's rural areas.

Zambia also has a strong vitamin A supplementation program that targets children under five, as well as a mandated sugar fortification program. But these have not done enough to curb the problem. Orange maize—when eaten as a porridge-like staple food known as *nshima*—could provide half of the average daily requirement of vitamin A for women and children.

Banji is one of the more than 1,000 "lead" farmers who are testing the new varieties of orange maize this season. Lead

farmers try new technologies and serve as models for their fellow farmers. HarvestPlus is also partnering with local seed companies to multiply orange maize seed so they can start supplying farmers in the Central, Eastern and Southern provinces later this year. Feed the Future is funding the dissemination of orange maize in Zambia's Eastern Province.

Asked if he will continue to grow orange maize instead of white in the future, Banji's answer is simple: "You know when you are in a small pond, you can't see what is in the next pond. But now I can see that in the next pond there is life—there is more life in orange maize than in white maize."

HarvestPlus leads a global effort to breed and disseminate micronutrient-rich staple food crops to reduce hidden hunger in malnourished populations. It is part of the [CGIAR Research Program on Agriculture for Nutrition and Health](#) and is coordinated by the International Center for Tropical Agriculture and the International Food Policy Research Institute.